In the claims:

1. (Currently amended) A method of evaluating a whole printing medium for use in a printing process, comprising:

~~generating spectral data from a sample of the whole printing medium~~ submitting the sample of whole printing medium to interferometric analysis thereby generating spectral data; and

analysing the spectral data, wherein analysis of the spectral data comprises evaluating features of the whole printing medium indicative of the performance of the whole printing medium in the printing process; and predicting the performance of the whole printing medium in the printing process in response to a set of spectral data indicative of performance-related features of reference whole printing media.

2. (Previously presented) A method of evaluating a whole printing medium as defined in claim 1, wherein analysis of the spectral data further comprises accepting or refusing the whole printing medium for use in the printing process in response to the whole printing medium performance prediction.

3. (Currently amended) A method of evaluating a whole printing medium as defined in claim 1, wherein ~~generating spectral data~~ interferometric analysis comprises submitting the sample of whole printing medium to FT-IR interferometric analysis.

4. (Currently amended) A method of evaluating a whole printing medium as defined in claim 1, wherein ~~generating spectral data~~ interferometric analysis comprises submitting the sample of whole printing medium to FT-NIR interferometric analysis.

5. (Currently amended) A method of evaluating a whole printing medium as defined in claim 1, wherein ~~generating spectral data~~ interferometric analysis comprises irradiating the sample of whole printing medium with light in a specific spectral range of the infrared spectrum.

6. (Currently amended) A method of evaluating a whole printing medium as defined in claim 1, wherein ~~generating spectral data~~ interferometric analysis comprises irradiating the sample of whole printing medium with light in a specific spectral range of the near-infrared spectrum.

7. (Currently amended) A method of evaluating a whole printing medium as defined in claim 1, wherein ~~generating spectral data~~ interferometric analysis comprises:

submitting the sample of whole printing medium to FT-IR interferometric analysis;

submitting the sample of whole printing medium to FT-NIR interferometric analysis; and

obtaining different and complementary spectral data from (a) the FT-IR interferometric analysis and (b) the FT-NIR interferometric analysis.

8. (Currently amended) A method of evaluating a whole printing medium as defined in claim 1, wherein ~~generating spectral data~~ interferometric analysis comprises:

irradiating the sample of whole printing medium with light having a predetermined frequency characteristic;

detecting a radiation response from the irradiated sample of whole printing medium; and

extracting the spectral data from the radiation response.

9. (Previously presented) A method of evaluating a whole printing medium as defined in claim 1, wherein generating spectral data comprises:

generating light having a predetermined frequency characteristic;

irradiating the sample of whole printing medium with the generated light having a predetermined frequency characteristic;

selectively absorbing energy from the irradiating light through the whole printing medium;

producing from energy of the irradiating light not absorbed by the whole printing medium a time distributed radiation response related to properties of the whole printing medium;

collecting the time distributed radiation response;

converting the collected time distributed radiation response to an analog response signal;

converting the analog response signal to a digital response signal;

supplying the digital response signal to a computer to provide a time domain response; and

in the computer, mathematically converting the time domain response to a frequency domain response by a time-to-frequency domain transformation to thereby produce the spectral data.

10. (Previously presented) A method of evaluating a whole printing medium as defined in claim 9, comprising representing the spectral data under the form of an energy/frequency pattern.

11. (Previously presented) A method of evaluating a whole printing medium as defined in claim 9, comprising representing the spectral data under the form of a graph of absorbance versus wave number.

12. (Previously presented) A method of evaluating a whole printing medium as defined in claim 8, wherein irradiating the sample of whole printing medium with light comprises directing light radiation toward the sample of whole printing medium at an angle and detecting a radiation response comprises collecting a reflected scattered light radiation response.

13. (Previously presented) A method of evaluating a whole printing medium as defined in claim 8, wherein irradiating the sample of whole printing medium comprises propagating light through the whole printing medium; and detecting a radiation response comprises collecting a scattered radiation response produced by the light propagated through the sample of whole printing medium.

14. (Previously presented) A method of evaluating a whole printing medium as defined in claim 8, wherein generating a spectral data further comprises enclosing the sample of whole printing medium in a gas-tight enclosure to prevent evaporation of volatile components and thereby obtain maximal information.

15. (Previously presented) A method of evaluating a whole printing medium as defined in claim 1, wherein generating a-spectral data comprises producing a set of FT-IR data and detecting spectral data indicative of features of the whole printing medium related to performance of the whole printing medium in the printing process comprises comparing the produced FT-IR data with a reference set of FT-IR data obtained from reference whole printing media.

16. (Previously presented) A method of evaluating a whole printing medium as defined in claim 15, wherein analysis of the spectral data further comprises accepting or refusing the whole printing medium for use in the printing process in response to the whole printing medium performance prediction, and accepting or refusing the whole printing medium comprises:

defining tolerance criteria by reference to deviations between the produced FT-IR data and the reference set of FT-IR data;

applying the tolerance criteria to the deviations between the produced FT-IR data and the reference set of FT-IR data; and

accepting the whole printing medium for use in the printing process when the deviations between the produced ~~set of~~ FT-IR data and the reference set of FT-IR data are situated within limits established by the tolerance criteria.

17. (Previously presented) A method of evaluating a whole printing medium as defined in claim 16, wherein defining tolerance criteria comprises:

obtaining a reference set of spectral data for a plurality of whole printing media of slightly different chemical compositions;

obtaining information relating to the physical, mechanical and functional properties of the plurality of whole printing media of slightly different chemical composition;

correlating the reference set of spectral data with the physical, mechanical and functional properties of the plurality of whole printing media of slightly different chemical composition to produce a correlated set of spectral data; and

determining the impact on the physical, mechanical and functional properties of the whole printing medium of deviations from the correlated set of spectral data.

18. (Previously presented) A method of evaluating a whole printing medium as defined in claim 1, wherein the whole printing medium performance prediction also comprises: constructing training sets of spectral data for each of a plurality of whole printing medium parameters; and indicating variations of the spectral data corresponding to variations of said whole printing medium parameters.

19. (Previously presented) A method of evaluating a whole printing medium as defined in claim 1, wherein the whole printing medium performance prediction comprises:

identifying areas of a currently generated and reference sets of spectral data in which deviations occur; and

associating the deviations with features of the whole printing medium indicative of potential problems or compromised performance if introduced into the printing process.

20. (Previously presented) A method of evaluating a whole printing medium as defined in claim 1, wherein the whole printing medium performance prediction further comprises:

obtaining, through experimentation, sets of spectral data corresponding to printing media having known properties;

storing the sets of spectral data obtained through experimentation along with indications about the features of the respective printing media; and

evaluating spectral data from the whole printing medium in response to the sets of spectral data.

21. (Currently amended) A device for evaluating a whole printing medium for use in a printing process, comprising interferometric analysis means for generating spectral data from a sample of the whole printing medium and means for analysing the spectral data, wherein the analysing means comprises:

means for detecting spectral data indicative of features of the whole printing medium related to performance of the whole printing medium in the printing process; and

means for predicting the performance of the whole printing medium in the printing process in response to a set of spectral data indicative of performance-related features of reference whole printing media.

22. (Previously presented) A device for evaluating a whole printing medium as defined in claim 21, wherein the analysing means further comprises means for accepting or refusing the whole printing medium for use in the printing process in response to the whole printing medium performance prediction.

23. (Currently amended) A device for evaluating a whole printing medium for use in a printing process, comprising a generator of spectral data from a sample of the whole printing medium, the generator comprises an interferometric analysis system, and an analyser of the spectral data, wherein the analyser comprises:

a detector of the spectral data indicative of features of the whole printing medium related to performance of ~~said~~ the whole printing medium in the printing process; and

a predictor of the performance of the whole printing medium in the printing process in response to a set of spectral data indicative of performance-related features of reference whole printing media.

24. (Previously presented) A device for evaluating a whole printing medium as defined in claim 23, wherein the analyser comprises a decision-making computer system for accepting or refusing the whole printing medium for use in the printing process in response to the prediction of the performance of the whole printing medium conducted by the predictor.

25. (Currently amended) A device for evaluating a whole printing medium as defined in claim 23, wherein the ~~generator~~ interferometric analysis system comprises a FT-IR interferometric analysis system.

26. (Currently amended) A device for evaluating a whole printing medium as defined in claim

23, wherein the ~~generator~~ interferometric analysis system comprises a FT-NIR interferometric analysis system.

27. (Currently amended) A device for evaluating a whole printing medium as defined in claim 23, wherein the ~~generator~~ interferometric analysis system comprises a source of light in a specific spectral range of the infrared spectrum for irradiating the sample of whole printing medium.

28. (Currently amended) A device for evaluating a whole printing medium as defined in claim 23, wherein the ~~generator~~ interferometric analysis system comprises a source of light in a specific spectral range of the near-infrared spectrum for irradiating the sample of whole printing medium.

29. (Currently amended) A device for evaluating a whole printing medium as defined in claim 23, wherein the ~~generator~~ interferometric analysis system comprises:

a FT-IR interferometric analysis system;

a FT-NIR interferometric analysis system; and

a compiler of different and complementary spectral data from (a) the FT-IR interferometric analysis system and (b) the FT-NIR interferometric analysis system.

30. (Currently amended) A device for evaluating a whole printing medium as defined in claim 23, wherein the generator further comprises:

a source of light having a predetermined frequency characteristic for irradiating the sample of whole printing medium;

a detector of a radiation response from the irradiated sample of whole printing medium; and

an extractor of the spectral data from the radiation response.

31. (Previously presented) A device for evaluating a whole printing medium as defined in claim 30, further comprising a portable probe unit incorporating the source of light and the detector of radiation response for remotely probing a whole printing medium on site.

32. (Previously presented) A device for evaluating a whole printing medium as defined in claim 30, wherein the source of light is oriented for directing light radiation toward the sample of whole printing medium at an angle; and a the detector of a radiation response comprises a collector of reflected scattered light radiation response.

33. (Previously presented) A device for evaluating a whole printing medium as defined in claim 30, wherein: a the source of light is oriented for propagating light through the sample of whole printing medium and the detector of radiation response comprises a collector of scattered radiation produced by light propagated through the sample of whole printing medium.

34. (Previously presented) A device for evaluating a whole printing medium as defined in claim 23, wherein the generator of spectral data further comprises a gas-tight enclosure for enclosing the sample of whole printing medium to prevent evaporation of volatile components and thereby obtain maximal information.

35. (Previously presented) A device for evaluating a whole printing medium as defined in claim 23, wherein the generator of spectral data is a generator of FT-IR data and the detector of the spectral data indicative of features of the whole printing medium related to performance of the whole printing medium in the printing process comprises a feature allowing comparison of the produced FT-IR data with a reference set of FT-IR data obtained from a reference whole printing media.

36. (Previously presented) A device for evaluating a whole printing medium as defined in claim 35, wherein the analyser further comprises:

means for defining tolerance criteria by reference to deviations between the generated FT-IR data and the reference set of FT-IR data;

means for applying the tolerance criteria to the deviations between the generated FT-IR data and the reference set of FT-IR data; and

means for accepting the whole printing medium for use in the printing process when the deviations between the generated FT-IR data and the reference set of FT-IR data are within the limits established by the tolerance criteria.

37. (Previously presented) A device for evaluating a whole printing medium as defined in claim 36, wherein the means for defining tolerance criteria comprises:

means for obtaining a reference set of spectral data for a plurality of printing media of slightly different chemical compositions;

means for obtaining information relating to the physical, mechanical or functional properties of the plurality of printing media of slightly different chemical compositions;

means for correlating the reference set of spectral data with the physical, mechanical or functional properties of the plurality of printing media of slightly different chemical compositions to produce a correlated set of spectral data; and

means for determining the impact on the physical, mechanical or functional properties of the whole printing medium of deviations from the correlated set of spectral data.

38. (Previously presented) A device for evaluating a whole printing medium as defined in claim 23, wherein the predictor comprises:

means for constructing training sets of spectral data for each of a plurality of whole printing medium parameters; and

means for indicating variations of the spectral data corresponding to variations of the whole printing medium parameters.

39. (Previously presented) A device for evaluating a whole printing medium as defined in claim 23, wherein the predictor comprises:

means for identifying portions of a currently generated and reference sets of spectral data in which deviations occur; and

means for associating the deviations with features of the whole printing medium indicative of performance in the printing process.

40. (Previously presented) A device for evaluating a whole printing medium as defined in claim 23, wherein the predictor comprises:

means for obtaining, through experimentation, sets of spectral data corresponding to printing media having ~~given~~ known properties;

means for storing the sets of spectral data obtained through experimentation along with indications about the features of the respective printing media; and

means for evaluating spectral data from the whole printing medium in response to the sets of spectral data.

41. (Previously presented) A method of evaluating a whole printing medium as defined in claim 1, wherein said whole printing medium is whole printing ink, jet printing ink or a dye.

42. (Previously presented) A method of evaluating a whole printing medium as defined in claim 9, wherein said whole printing medium is whole printing ink, jet printing ink or a dye.

43. (Previously presented) A method of evaluating a whole printing medium as defined in claim 17, wherein said whole printing medium is whole printing ink, jet printing ink or a dye.

44. (Previously presented) A method of evaluating a whole printing medium as defined in claim 20, wherein said whole printing medium is whole printing ink, jet printing ink or a dye.

45. (Previously presented) A device for evaluating a whole printing medium as defined in claim 21, wherein said whole printing medium is whole printing ink, jet printing ink or a dye.

46. (Previously presented) A device for evaluating a whole printing medium as defined in claim 37, wherein said whole printing medium is whole printing ink, jet printing ink or a dye.

47. (Previously presented) A device for evaluating a whole printing medium as defined in claim 40, wherein said whole printing medium is whole printing ink, jet printing ink or a dye.

48. (Previously presented) A method of evaluating a whole printing medium as defined in claim 1, wherein the whole printing medium performance prediction comprises:

identifying areas of currently generated and reference sets of spectral data in which deviations occur; and

associating the deviations with features of the whole printing medium indicative of potential problems and compromised performance if introduced into the printing process.

49. (Previously presented) A device for evaluating a whole printing medium as defined in claim 36, wherein the means for defining tolerance criteria comprises:

means for obtaining a reference set of spectral data for a plurality of printing media of slightly different chemical compositions;

means for obtaining information relating to the physical, mechanical and functional properties of the plurality of printing media of slightly different chemical compositions;

means for correlating the reference set of spectral data with the physical, mechanical and functional properties of the plurality of printing media of slightly different chemical compositions to produce a correlated set of spectral data; and

means for determining the impact on the physical, mechanical and functional properties of the whole printing medium of deviations from the correlated set of spectral data.